Author’s response to reviews

Title: Evidence for a comprehensive approach to Aboriginal tobacco control to maintain the decline in smoking: an overview of reviews among Indigenous peoples

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Author’s response to reviews:

Author responses to reviewer comments (listed in italics):

Reviewer #1:

1. Important topic and great opportunity for publication. Appreciate the applied direction of the work, but the paper was too long, and hard to read. The manuscript could benefit from some major editing (in-paper reference format, and the Background). Should be majorly shortened for consideration - perhaps consider presenting results in matrix format, by priority/principle? Or some sort of diagram? Doesn't seem like an academic paper at this point.

We appreciate the acknowledgement of the importance of this topic and thank the reviewer for these suggestions. We have significantly reduced the background as advised (now only 558 words) and removed five related references (see tracked changes).
Capturing review results concisely but accurately was challenging. Included reviews covered a diverse literature and used narrative synthesis extensively. We tabulated results where we could accurately reflect the data (as below). However, after trying alternatives, we felt the narrative was needed when mapping the evidence against the CATs framework to reflect the original synthesis in each review. This mapping, together with our analysis of the quality and extent of overlap and discordance among included reviews, are important new contributions needed to help policy and decision makers apply existing systematic review evidence for Indigenous Australians.

We have revised the descriptions of results to shorten, and presented results in tabular form as follows:

- Matrix of studies showing overlap in included studies within reviews (Additional file 7)
- A summary of characteristics of reviews, including populations, objectives, key outcomes, conclusions and AMSTAR appraisals (Table 1).
- A summary of interventions reported in reviews against each of the NTS priority areas (Table 2).
- A summary of interventions reported in reviews against each of the NATSIHP principles and priorities (Table 3).

2. The comments like "based on expertise and limited Indigenous specific evidence" is important - how to distinguish what are appropriate conclusions? In the methods, authors discuss using AMSTAR, but then the quality isn't addressed at any other point in the results, other than descriptively in tables. Primary review quality (and its importance) should be clarified, and considered (perhaps as a way to reduce the data further).

We thank the reviewer for this comment and agree that it is important to distinguish appropriate conclusions, as noted in the methods (p15) “We also clarified where reviewer recommendations or suggestions appeared to be based on evidence from studies within the review. Where the evidence for the reviewer recommendation appeared to be based on expertise rather than clearly derived study data presented within the review, we have specified this and used verbs such as “the reviewer asserted, suggested, or recommended”.

We have clarified throughout other sections of the manuscript as follows.

- Abstract: noted that the overall review quality was variable
• Results and discussion: we have explicitly identified where conclusions appear to be supported by the evidence (or not). For example, page 26 “However, these reviewer recommendations appear to be based on expertise and limited descriptive data rather than evidence of effectiveness.”

• Results: added (p19)

“Review quality. We assessed six reviews as low risk of bias, eight as moderate risk of bias and seven as high risk of bias using the AMSTAR rating (Additional file 6). The most common issues were lack of information about search strategies and results, duplicate data extraction, and quality appraisals.”

• Discussion: added (where we had previously noted the issue of lack of risk of bias assessments of primary studies) (p44):

“The review quality was variable and there was also varying assessment of risk of bias of included studies, with no GRADE assessments conducted within the included reviews, so the basis of confidence in these reviewer conclusions was unclear.”

• Conclusions (p49):

“While review quality is variable, there is generally limited Indigenous-specific evidence of impacts on smoking rates, however most reviewers recommended multi-faceted interventions incorporating all NTS Priorities…”

3. I think the limitation of grey literature from Australia only isn't a limitation as the results are going to be applied specifically in an Australian setting. This could be emphasized more.

We have added the following to the strengths/limitations (p44):

“However, as this overview aims to synthesis review evidence for tobacco control for Indigenous Australians, and therefore the benefits of including this grey literature outweigh any limitations.”

4. (a) Why was protocol not registered with PROSPERO? (b) Outcomes should be communicated as measurements, not only concepts. (c) PRISMA checklist to be included?

(a) PROSPERO registration: We developed a protocol for the review that was agreed by the independent reference group for the review prior to commencing data collection. We didn’t register the review with PROSPERO due to a short timeframe between finalising the protocol and commencing data collection, and limited resources. However, we are happy to append
the protocol as an additional file if preferred. We have added the following points of clarification (Methods (p6)):

“We developed a review protocol a priori (not registered with PROSPERO but available on request).”

(b) Outcome measures. Please see response to point 8.

(c) PRISMA checklist. We have provided a completed PRISMA checklist as per advice to authors.

5. P5. Line 49: "Tobacco smoking in high income countries has become a marker of social disadvantage, and is one of the principal causes of health inequality between rich and poor [13]." What does this mean? Please clarify.

This sentence has been deleted from the background section during the editing process described in point 1.

6. Could use some major editing for clarity, and conciseness. References could be prepared more clearly.

We have done this as suggested. Please see responses to point 1.

7. Issue: why did you not register with PROSPERO?

Please see response to point 4.

8. P9, line44: What were the outcomes explicitly? What types of measures were you looking for? How do you define "smoking cessation"? Morbidity and mortality from…?

We included any outcome measures for the concepts listed, and provided more definitional information in our data extraction guidance.

We have made the following changes to address this comment:

• Added new additional file 2, our data extraction guidance (items in section 5 relate to outcomes).
• Added the following to the ‘outcome measures’ section to explain the rationale for our inclusive approach (p10):

“Because this was a broad overview, aiming to map the type and amount of available evidence, our outcome eligibility criteria were deliberately inclusive. We included measures of the following primary and secondary outcomes irrespective of the outcome definition, measurement method or follow up time specified by review authors”

9. Should comment re: meta-analysis. Is this possible?

The overview aims to provide a high-level summary of the coverage and main conclusions from review level evidence against the CATs framework. While we planned to extract and report meta-analytic results for strategies if available, only two reviews reported any meta-analysis. This was anticipated because of the diversity of interventions, settings and populations, and bring into question whether a pooled estimate of effect would be meaningful. Our approach is in line with guidance for overviews. Most overviews do not routinely re-analyse data from reviews (or retrieve primary studies to do so). In this overview it was not possible to re-analyse data presented in reviews because few reviews presented sufficient data for conducting meta-analysis.

We have added the following comments to the methods to reflect the comments above as follows (p14):

“This overview aims to provide a summary of the coverage and main conclusions from review level evidence against the CATs framework. Meta-analysis was not conducted as it is unlikely that an overall estimate of effect would have been meaningful. Meta-analysis was also not feasible as most included reviews did not report a sufficient level of analysis for individual strategies.”

10. P12, line 8: avoiding double counting. What did you do about the double counting?/overlap?

We thank the reviewer for this comment and have clarified that the mapping of studies within reviews was conducted to identify where there was a risk of double counting, and then that we attempted to minimise these risks in our narrative summary and illustration of findings, described as follows in the methods (p14):

“The degree of overlap of studies between reviews was considered to identify where there was a risk of ‘double counting’ the number of interventions where the same studies were reported in different reviews. In the presentation of our overview findings, we have included selected extracts from the included reviews as illustration, and particularly where these represent the
overall findings in relation to the priority areas. Where possible, we avoided repeating narrative reporting of extracts about the same studies where these were reported by multiple reviewers. We also clarified where reviewer recommendations or suggestions appeared to be based on evidence from studies within the review.”

For example, see p27:

“Two reviews [18, 20] highlighted ‘The Tobacco Project’ in the Northern Territory [42], which demonstrated a small but not statistically significant reduction in tobacco use of 1.2% at the end of the project across all communities, with substantial variation between communities.”

We also considered this issue in the presentation of the summary results in tables 2 and 3 as follows (p24):

“Recognising there is a degree of overlap of studies between reviews, the types of interventions found within each review are listed under respective NTS priority areas in Table 2, and summarised narratively below.”

11. P14.line 49: You say that one of your inclusion criteria is reviews with Indigenous participants from Australia, Canada, NZ and USA, but then in the Results, you say that 13 reviews included people in any country..?

We have clarified the results section as follows (p14):

“Thirteen reviews included Indigenous people in any country, but only reported studies based in Australia, Canada, New Zealand and the USA.”

12. P17, line 18 "These recommendations appeared to be based on reasoned arguments about effectiveness in other populations and rationale to improve acceptability and implementation of interventions, rather than clear evidence of effectiveness of these strategies among Indigenous peoples." This is an important statement

We thank the reviewer for this comment and agree, thus this is highlighted in the abstract.

13. P18, line 33: "For 51 references, we were unable to identify a program or project name from review level data, so could not determine if these included multiple reports for the same program or study". Could you look at the primary study references within each review?

We did look at primary study references and were unable to identify many of the studies. Unfortunately on several occasions the publication titles in the review reference list did not
provide sufficient information to identify the program or study name. We didn’t retrieve primary studies; the large number of reports and grey literature made this infeasible.

14. P19, line2: Did you include updates of reviews? Wouldn't this have been redundant?

Yes, we did include updates of reviews. In one main example of updated reviews (Ivers et al), the updates only briefly summarise additional information to the original (very comprehensive) review. Another example (Carson) included original Cochrane reviews with restricted inclusion criteria (RCTs only) and then subsequent reviews, which included other types of studies. We have included this additional information to ensure a comprehensive approach.

15. P21, line 37; "looked for and found" studies is awkward. "Returned" studies?

We have edited the sentence as follows (p23):

“the most frequently identified interventions coded…”

16. Results section: How do you intend to consider the quality of the reviews when reporting the synthesized findings ("Priorities") across all reviews? No mention of quality.

We have added the following clarification to the methods (p14)

Considering the quality of evidence across reviews would have required an approach such as GRADE. However, the extent of narrative synthesis and diversity of approaches to assessing bias/quality of the primary evidence made it infeasible to apply current GRADE guidance.”

Further information about our approach to reporting quality of the reviews in given in point 2.

We haven’t detailed the implications of review quality in text in order to keep the descriptive text here to a minimum. Given the the complexity of discussing review quality implications of the synthesis findings beyond what is already in table 1 and the AMSTAR ratings, we feel it may be best to leave the descriptions as they are. However, we are happy to discuss this with the editors about how this may be feasible if changes are needed to our current approach.

17. Important topic, but became onerous to read. Main results could be presented in a table format and most of the narrative left in supplemental materials.

Please see response to point 1.
Reviewer #2:

18. Abstract: States that methods used were PRISMA reporting guidelines for systematic reviews. Would argue that PRISMA is not a methodology so this language needs clarified.

We have edited as follows:

• Abstract: “Reporting followed the PRISMA statement”.

• Methods, p8:

“We followed the PRISMA statement for reporting systematic reviews when items were applicable to overviews of reviews (Additional file 1)”.

19. Background: It is stated that the methods for developing the CAT framework are detailed elsewhere. However, given that this provides the framework for the analysis, it would be helpful to have some more detail on what actually constitutes the framework’s domains. I’m assuming that it simply contains a list of priority areas from CATs and a list of principles from the NATSIHP but this is not clear.

The CATs framework domains are those listed as NTS priority areas and NATSIHP principles and priorities, and we have added the following information in brackets for clarification (p9):

“key priority areas of the NTS and principles and priorities of the NATSIHP (CATs framework domains)”

In addition, we have submitted reviewer responses for the cited framework review, which includes the following image summarising the framework outlined in the current text. We can attach this as an additional file if helpful.

20. It is stated that this review is the second stage of a four stage project. However, only stages one and two are described here.

We thank the reviewer for this comment and have added a reference with further information about the other two stages as follows (p7):

“This overview was conducted under the Australian Prevention Partnership Centre, and is the second stage of a four-part project described in detail elsewhere [15].”

21. Methods
(1) It is not stated why a review of reviews was conducted, as opposed to a review of primary studies.

We have added the following text (p8):

“We used methods for conducting an overview of systematic reviews. This approach was taken because there is a proliferation of reviews in the field of tobacco control, and overview methods enabled us to examine the coverage and applicability of evidence from these reviews in relation to the CATs framework. By using overview methods we were also able to examine the quality and extent of overlap and discordance among existing reviews, in order to help decision-makers apply existing review evidence for Indigenous Australians and identify gaps in review activity.”

22. The review protocol is available from authors. However, it is not clear if this was available in the public domain prior to the review being conducted. If it was not available publicly, there is no guarantee that any post-hoc amendments were made not made.

See point 4a.

While we have not made any post-hoc amendments to the protocol, we also feel that in this review, which is guided by a structured framework, the impact any such amendments would be minor and unlikely to effect the overall findings of the overview.

23. It is not clear from the wording whether reviews of disadvantaged groups which may have included indigenous people in some studies/reviews were included.

Some reviews of disadvantaged groups (and groups who are not disadvantaged, such as smoking pregnancy reviews) that include indigenous people were not included in this review.

Our rationale was that when we examined the included studies in these reviews (listed in Additional file 5), the studies were already included in other indigenous-specific reviews. Thus we felt there was limited value to be gained from including these studies, and significant complexities in evaluating the synthesized data specific to Indigenous people. We have clarified this in the text as follows (p9):

“We also checked these reviews for any studies among Indigenous people’s that might be additional to those already included within Indigenous-specific reviews. However, no new studies among Indigenous people were identified and therefore the value of including these reviews was low.”

We also referred to these studies in the discussion section and note whether there were similar findings to the indigenous-specific reviews in this overview as follows (see page 44):
“Our findings are consistent with those reported by other authors demonstrating a lack of tobacco research among Indigenous [50, 51], ‘special’ [52], minority [53, 54], and other populations [55], including Indigenous pregnant women [56] and adolescents [57]. A review of tobacco research outputs among Indigenous people was consistent with our findings that the majority of peer reviewed publications focussed on cessation [58]. While the suggestions and conclusions of the majority of reviewers in our overview are consistent with those reported in reviews in the general population [59-62], including multi-faceted interventions and population-wide measures to de-normalise smoking [63], the degree to which general population evidence is directly transferable to Indigenous people is not clear [50].”

24. It is not stated here that reviews which contain studies with indigenous people who are not from Australia, Canada, USA or New Zealand will be included.

We did not include reviews of studies among indigenous people not from Australia, Canada, USA or New Zealand, for the reasons outlined in the methods (page 9) that these countries have similar disparities in relation to smoking and health, and experiences of colonisation as Indigenous people in Australia. However, our search terms were relatively broad and no such reviews were identified and therefore are not listed in additional file 5. We can add this detail if it is considered important enough to increase the text content for.

25. Morbidity is included as outcome but it is not stated how this is measured (e.g. is rates of smoking related illness?).

Please see response to point 8.

26. Improvements in equality, partnership, engagement and cultural respect are included as outcomes. These are quite nebulous areas so some detail on how these are to be measured would be helpful.

We have included our data extraction guidance as new additional file to provide this detail. Items 4.7-4.15 provide definition and coding guidance for each of these items. Many of the definitions were deliberately broad, because the concepts were likely to be considered in quite different ways across reviews and we wanted to capture this diversity. We have edited the text to reflect this:

• New additional file 2 - CATs_data_extraction_guidance
• Methods, outcomes measures (p12) added:
“While the criteria for these broad in the protocol was broad, we included some guidance on what to look for (Additional file 2). We then used the independent review process to refine consensus on whether the outcome measures reported were relevant to that outcome where there was uncertainty.”

27. No social science databases (e.g. ASSIA, Social Science Citation Index) were searched and this may have potentially yielded additional studies. I would have also expected CINAHL to have been searched. It is stated that MEDLINE and PubMed were searched, however, as PubMed contains MEDLINE I'm not sure why both were searched.

We appreciate this suggestion and note that searching Pubmed and Medline may be unnecessary. However we have included these databases in the search following advice from a qualified medical librarian. Based on our previous experience with similar searches, we also felt that epistemonikos was a more important source than CINAHL. We feel confident we are likely to have captured all relevant reviews of tobacco control among Indigenous people, particularly given the ATSIHealth and website searching.

28. Was there a cut-off for number of Google Scholar results?

We did not apply an arbitrary cut-off but rather continued our search until saturation was reached i.e. when additional retrieved results were consistently of no direct relevance. We have clarified this in Additional File 3 as follows:

“Searched titles until saturation was reached i.e. when additional retrieved results were consistently of no direct relevance.”

29. Why the limit of 2000? And will reviews that report on studies published before 2000 be included.

The date limit of 2000 was a pragmatic one based on likelihood of including most relevant recent reviews that are likely to be considered by decision-makers, and the considerable developments in the tobacco control landscape. We have added the following to the methods (p13):

“Reviews published prior to 2000 were excluded as considerable developments in the tobacco control landscape since this time make it unlikely that reviews prior to this date would still be considered relevant by decision-makers.”

We had also noted in the results (page 17):
“While reviews published after 2000 only were included, a number of studies within those reviews dated back to 1980.”

30. Data extraction - not clear if this was done at the review level or individual study level.

In line with current guidance for overviews, we extracted data from reviews only (Cochrane handbook), and have clarified this in the methods as follows (page 14):

“Data were extracted from reviews only and no data were extracted from individual studies.”

31. Results: AMSTAR. Lines 38 - 40 on page 17. It seems as if the AMSTAR score has been used to create a grade for risk of bias (i.e. low, moderate, high), however, it is not clear how this was done and if this grading system was based on previous work. As AMSTAR assesses study quality, which does not necessarily equate to the risk of bias, I would question the use of this approach to specifically assess risk of bias. Risk of bias in systematic reviews would be more appropriately assessed using the ROBIS tool (http://www.bristol.ac.uk/social-community-medicine/projects/robis/).

We agree, ROBIS is a gold standard approach for assessing risk of bias in systematic reviews. However, AMSTAR is currently one of the tools accepted in Cochrane overviews for appraising reviews and is widely used in non-Cochrane reviews. Although there is argument over whether items included in AMSTAR assess bias or broader concepts of quality, many align with the four domains of ROBIS. We took this into account when conducting and reporting our assessments. We reported AMSTAR judgements as per the tool’s guidance, and reported reasons for each judgement (see new additional file 2, Additional file 7). Rather than generate an AMSTAR score, which is problematic because there is no clear evidence for how to weight items, we elected to report a judgement based assessment of overall risk of bias. We did this by drawing on RoBIS guidance: assessing AMSTAR items that relate to each of the four ROBIS domains and considering other factors, such whether review authors inappropriately emphasised statistically significant results in drawing conclusions. The detailed guidance for our overall judgement is provided in the new additional file 2 (item 6.13).

32. Line 37 on p21 lacks clarity.

We thank the reviewer for this comment and have revised the sentence as follows (p22):

“Across the 21 included reviews, the most frequently identified interventions were coded under ‘providing greater access to a range of evidence-based cessation services’ (in 17 reviews) and ‘strengthening mass media campaigns’ (in 12 reviews).
33. Page 22 is one long paragraph and difficult to follow.

We have amended the paragraph to include more paragraphs.

In particular: a. Line 5-7 on p22 lacks clarity.

We have also edited line 5-7 as follows (p24):

“The reviewers may have looked for pricing studies in six reviews, but it appeared that reviewers did not search for pricing interventions in eleven of the reviews.”

b. Line 22 on p.22 - was this an intervention?

No this was not an intervention, this was a comment made by the reviewer and the following reference was cited as:


However, as we did not extract data from individual level studies we were unable to determine where this was retrieved from. We have amended the text to read (25):

“The cost of cigarettes was identified as an important reason for quitting smoking by Indigenous Australians, with a tobacco website cited as the source [23].”

34. Page 32 line 44. Which reviews?

This statement refers to the 21 included reviews and is a narrative description of the findings Table 3. Ie in relation to equality, one review explicitly explores differential effectivensss, eight reviews mention or discuss related factors in the background or discussion, and no mention was identified in 12 reviews. In addition to the general explanation before Table 2, we have clarified this in this section as follows (p34):

“Other issues related to equality or a human rights approach were mentioned in eight of the 21 included reviews, and no explicit mention could be identified in 12 of the reviews.”

35. NATSIHP principles. This section is quite long. Given the difficulty in drawing out the NATSIHP principles due to the level of detail reported in the reviews, it is difficult to say
how much of this information can be conclusive so I'm not sure that all the information provided is necessary. It may be more appropriate and easier to follow if it was summarised as a table or illustration instead (e.g. an annotated version of table 3).

We did discuss this, and we had actually started with an annotated table in an early draft. But the annotated table was very unwieldy and we felt even more difficult to read than the text. We appreciate this is complex for a number of reasons, including the nebulous nature of the descriptions of the issues as the reviewer has identified. Nevertheless these are key domains identified in the NATSIHP and we feel these challenges are important understand in this context.

We have highlighted this in the Discussion as follows (p44):

“Evidence synthesized under the NTS Priorities related to specific intervention strategies and was generally well described (i.e. ‘the what’), while evidence under the NATSIHP Principles and Priorities tended to be more related to process or implementation aspects of interventions and were less well described (i.e. ‘the how’).”

36. Discussion: The authors (rightly) consider whether evidence from other populations is applicable to indigenous people. It would also be worth considering whether the evidence they identified is applicable to other vulnerable groups (e.g. Gypsy/Travellers, refugees).

We have noted in the second paragraph of the discussion the similarities with the findings of this overview, and reviews among other disadvantaged and general population reviews. However this wasn’t an aim of our review, so we feel it is best not to make inferences that were not based on a systematic assessment of the evidence. We aren’t in a position to consider whether the evidence from this overview is applicable to other vulnerable groups, as each has unique issues and differences. One of the cited reviews in the discussion does look at similarities and differences between different population groups. To go into consideration of the specific issues for refugees, for example, requires consideration of the country of origin (which is likely to be low-middle income) and the specific stage of the tobacco epidemic for that country, gender and cultural influences on tobacco use etc). However we felt exploring, discussing and considering these issues was outside the scope of this overview.

37. Detail on stages 3 and 4 of the project and how they relate to this review would be helpful.

As per response to point 20, we have included a link to details about stages 3 and 4 of the project. We have not included further detail at this stage due to the issues with the manuscript length already (and added complexity of bringing in consideration of two more stages), but can add this if it is really felt to add value beyond the link.
38. General points: In-text references are sometimes out of sequential order

We thank the reviewer for noting this and have amended the in-text references in sequential order.

(2) No page numbers provided for quotations

We have added review page numbers for in-text quotations.